4
R6X
rds

A-4

Division of Birds

THE GEOLOGICAL AND NATURAL HISTORY SURVEY
OF MINNESOTA.

ZOOLOGICAL DIVISION.

THE WINTER BIRD-LIFE OF MINNESOTA

BEING AN ANNOTATED LIST OF BIRDS THAT HAVE BEEN FOUND WITHIN THE STATE OF MINNESOTA DURING THE WINTER MONTHS.

BY

THOMAS S. ROBERTS, M. D.

ORNITHOLOGIST TO THE DEPARTMENT OF ANIMAL BIOLOGY, UNIVERSITY OF MINNESOTA AND ASSOCIATE DIRECTOR OF THE ZOOLOGICAL DIVISION OF THE GEOLOGICAL AND NATURAL HISTORY SURVEY OF MINNESOTA.

OCCASIONAL PAPERS: NUMBER 1.

234435

MINNEAPOLIS, MINNESOTA.
FEBRUARY 1916.

EVENING GROSBEAK

(*Hesperiphona vespertina vespertina*)

Lower figure, male; upper figure, female. Feeding on fruit of box-elder tree.

THE GEOLOGICAL AND NATURAL HISTORY SURVEY
OF MINNESOTA.

ZOOLOGICAL DIVISION.

THE WINTER BIRD-LIFE OF MINNESOTA

BEING AN ANNOTATED LIST OF BIRDS THAT HAVE BEEN FOUND WITHIN THE STATE OF MINNESOTA DURING THE WINTER MONTHS.

BY

THOMAS S. ROBERTS, M. D.

ORNITHOLOGIST TO THE DEPARTMENT OF ANIMAL BIOLOGY UNIVERSITY OF MINNESOTA AND ASSOCIATE DIRECTOR OF THE ZOOLOGICAL DIVISION OF THE GEOLOGICAL AND NATURAL HISTORY SURVEY OF MINNESOTA

OCCASIONAL PAPERS—NUMBER 1.

MINNEAPOLIS, MINNESOTA.
FEBRUARY 1916.

1

2

3

4

Winter guests at the window feeding-counter of Edwin C. Brown, Kenwood, Minneapolis. Nos. 1 and 2, White-breasted Nuthatch; No. 3, Blue Jay; No. 4, Downy Woodpecker.

Photographs by E. C. Brown

Introductory Note.

This paper is presented as the first of a series which it is proposed to issue from the Zoological Division of the Geological and Natural History Survey of Minnesota, under the caption "Occasional Papers." Articles appearing in this connection will be of a preliminary character, or matter of immediate or passing interest, more complete or monographic reports being issued as heretofore in the already established "Zoological Series."

The present article has been prepared largely from data accumulated by the writer during many years, these files, with much additional reference matter, now forming the basis of the ornithological records of the Survey. Many observers throughout the state have for a long time freely contributed lists and notes, and where information from such sources has been used credit has been given in the text. In a few places in this paper passages have been incorporated verbatim or in slightly altered form, from an article on "The Winter Birds of Minnesota," published in 1881 in the Ninth Annual Bulletin of the Minnesota Geological and Natural History Survey.

The colored plate of the Evening Grosbeak was made by the Minneapolis Bureau of Engraving from a water-color by a Japanese artist, Kako Morita, who worked under the direction of the writer, from Minnesota skins in the Survey collection. The plate is a faithful reproduction of the drawing and any deviations from nature that it presents are imperfections in the original rather than failure in the work of the lithographer.

The excellent photograph of the Canada Spruce Grouse was taken in 1914 from a wild bird in the Burnt Lake district in northeastern Minnesota by Mr. John Walters. The photograph is now the property of Mr. A. C. LeDuc of Duluth, who has kindly permitted its use in this connection. The curious "display" picture of the Ruffed Grouse was taken by Mr. F. N. Manross of Forestville, Connecticut, from a young male bird in captivity. It appeared in Herbert K. Job's "Propagation of Wild Birds," 1915, published by Doubleday, Page and Company, with whose consent and the courteous permission of Mr. Manross it is here presented. Of the remaining half-tone illustrations the caption beneath each is sufficiently explanatory of its character and source. With a single exception—that depicting the Longspur tragedy—they are here reproduced for the first time.

One of the considerations in presenting this paper on our winter birds is the hope that it will bring to the Natural History Survey much additional information in regard to the bird-life of the state. All notes and records will be most welcome and will be so preserved and filed that they will find their way into future publications, credited to the persons reporting them. Address the author, care of the Zoological Museum, University of Minnesota, Minneapolis, Minn.

ELK SPRING, ITASCA STATE PARK, WITH THE THERMOMETER 59 DEGRESS BELOW ZERO

Photograph by Heinzelman

THE WINTER BIRD-LIFE OF MINNESOTA*

THE question is frequently asked, "How many kinds of birds may be looked for in Minnesota in the winter season?" and this query is almost as often supplemented by the remark, "Not very many, I suppose." It is the object of this paper to present for the information of such interested persons a brief outline of the winter bird-life of our state. Minnesota embraces such a large area and is so situated with reference to established life-zones that there is a great difference in both the flora and fauna in various parts of the state. Thus, the birds of the northern evergreen portion differ quite markedly from those of the southern deciduous-tree area; and the prairies and coteaux of the western part possess a number of birds not found in the eastern wooded region. These differences are much more conspicuous in the summer inhabitants, but still they are noticeable in the winter bird-life also, so that in a list of the birds of the whole state it is necessary, for a clear understanding, to give the place as well as the manner of their occurrence. This will be done in a brief note accompanying each species. By reason of the large number of persons specially interested in the birds of the vicinity of the Twin Cities, it has been deemed advisable to designate those that may be looked for in Hennepin and Ramsey counties by an asterisk prefixed to the name.

The much greater abundance and attractiveness of birds in the summer season is very apt to entirely absorb the attention of the casual observer and lead to the almost complete neglect of our winter birds; especially as the latter are greatly diminished in numbers, comparatively silent, and largely shielded from observation by the many drawbacks to outdoor investigation at that time. But because they do not force themselves upon our attention in winter as they do in summer we ought not to conclude either that there are no birds present, or that they are of little interest. The fact is, that while they are generally far from abundant in the cold season, **particularly in respect to individuals,** there are yet a goodly number of species to be found within the limits of the state, and among these no lover of birds can fail to find a number that are of much more than average interest.

The only opportunity to become acquainted with the handsome and little-known Evening Grosbeak, its relative the Pine Grosbeak, the elegant northern Waxwing, or the more common but little less interesting Red-poll Linnet, Snow Bunting and Lapland Longspur, is during their sojourn here as visitors from their far northern summer homes. Then too, the greatly altered conditions under which all our birds must live during the season of cold and snow present an entirely new field for study and observation. An acquaintance with the needs and habits of these birds during the time of their greatest stress will make it possible for those so inclined to do much to assist and protect them by furnishing suitable shelter and food.

So the winter-time has its peculiar rewards, its delights and its satisfactions for the bird student, though it is true the difficulties to be overcome are much greater and the harvest much less abundant than in the rich and glorious spring and summer time.

The economic value of most of the winter birds is very great. In their incessant search for food during the long cold season they unconsciously do an immense service for man. The Woodpeckers are vigorously digging out the borers in the trees and shrubs; the Chickadees, Nuthatches and Creepers are busily devouring the insect eggs and larvae concealed in the crevices of the bark on trunk and branch; the Sparrows are destroying tons of seeds of noxious weeds; and the Owls and Hawks are killing off the destructive rabbits, hares, red squirrels and mice. It is true that some of these same Owls and Hawks are at the same time destroying not a few Grouse, Quail and valuable non-game birds, but it has been clearly shown that with only two or three exceptions the balance is largely in their favor. It is probable that the winter birds, as a whole, are a more valuable asset to the state than a corresponding number in the summer season, as the kind of food most of them are forced to take results in a specially great benefit to the farmer and horticulturist.

There are in round numbers 300 species of birds, with some 10 or 12 sub-species, occurring in Minnesota. Of these, 85 species and 5 sub-

*This article was prepared at the request of Mr. Carlos Avery, Commissioner of the Minnesota State Department of Fish and Game, and was published as here presented, with the exception of the colored plate and general summary, in No. 4 of "Fins, Feathers and Fur," the official organ of that Department.

species have thus far been found in the state during the winter months. But not all of the latter could be found in any one locality, nor is it at all probable that all would ever occur within the limits of the state in any one year. Therefore, in order to make the winter acquaintance of the full list it would be necessary to cover the whole state over a series of years, varying in climatic and food conditions. The abundance or scarcity of food, and the rigor of the cold season in other regions, particularly to the northward, have much to do with determining the presence or absence and the numbers of some of our winter visitants.

It will perhaps be helpful to present the list under the following four sub-headings, as in this way may be shown at a glance the manner of occurrence of those assembled in each group.

1. Permanent Residents—32 species, 3 sub-species.
2. Winter Visitants—16 species, 1 sub-species.
3. "Half Hardy"—10 species, 1 sub-species.
4. Accidental—27 species.

Of these groups the first two, numbering together 48 species and 4 sub-species, constitute the real winter bird-life. The others are of irregular and uncertain occurrence, their presence depending upon mild seasons or more or less accidental conditions. Of the 48 species and 4 sub-species making up the real winter bird-life of the state, not more than about 30 would be likely to be found in any one locality, and of these, several would be of such rare and irregular occurrence that two dozen species at most would comprise the list that could be confidently looked for by any local observer.

PERMANENT RESIDENTS.

The birds included in this group are those that are with us all the year round. It is still a mooted question whether or not the individuals breeding in a locality are the same as those occurring in winter; for example, whether or not the winter Blue Jays are the identical birds that make their summer home in that particular place. There may be a to and fro movement even among these so-called permanent birds, and while the species is represented throughout the year the individuals may change. The interesting work in banding birds that is going on at present will probably throw some light on this question, as it promises to do on many other unsolved problems in regard to the movements of birds.

1. **HERRING GULL (Larus argentatus).** This, the largest of our gulls, may be seen in considerable numbers along the Lake Superior shore from Duluth to Pigeon River throughout the winter, when the lake does not freeze.

Several other large gulls, northern breeding species, may occur on Lake Superior in the winter time, but thus far there are no definite records.

2. **AMERICAN MERGANSER: GOOSANDER: SHELLDRAKE (Mergus americanus).** A few individuals winter on Lake Superior and in open places in the Mississippi and other rivers.

3. **RED-BREASTED MERGANSER: SHELLDRAKE (Mergus serrator).** Rather more frequent than the last under similar conditions. Smaller than that species, 22 inches instead of 25, with the breast, instead of white, brownish marked with black.

4. **GOLDEN-EYE: WHISTLE-WING (Clangula clangula americana).** A beautiful black and white duck occurring in small flocks on Lake Superior and open places in rivers, no matter how cold the weather. Many years ago, before the building of the apron and before the noise and activity became so great about the Falls of St. Anthony, a flock of these ducks used to spend the winter in the pool below the cataract.

A very similar duck, called Barrow's Golden-Eye, may be a winter visitant in our state, but thus far no specimens have been secured. The white patch on the side of the head of the adult male is crescentic-shaped instead of oval as in the common Golden-Eye. The females and immature birds are difficult to distinguish.

*5. **BOB-WHITE: QUAIL (Colinus virginianus virginianus).** The cheerful whistle of the Bob-White is a much more frequent sound in southeastern Minnesota than it was forty odd years ago when the writer first began taking note of such things. It is now a well known and often locally common bird and has extended its range in the eastern part of the state as far north as Lake Mille Lacs, westward to the Dakota line, and northwestward to at least Marshall county (E. L. Brown, 1903) near the northwestern angle of the state. Severe winters are hard upon them and their numbers fluctuate from year to year, largely due to the conditions of the cold season. Much can be done to preserve this bird by winter feeding and suitable protective measures.

It may be a surprise to many to hear that the Bob-White, usually regarded primarily as a game bird, is from its food habits one of the most valuable of all our birds to the agriculturist and horticulturist, and therefore to mankind generally. Dr. Hornaday in a well placed burst of enthusiasm says that "we now know that for the smaller pests of the farm the Bob-White is the

most wonderful engine of destruction ever put together of flesh and blood. I think it is fairly beyond question that of all the birds that influence the fortunes of the farmers and fruitgrowers of North America, **the common Quail** is the most valuable!"—(Wild Life Conservation in Theory and Practice, 1914, p. 71.) In the winter season the food is almost entirely vegetable (99.8 per cent), consisting chiefly of the seeds of a long list of weeds that are the farmer's worst pests among plants. At other seasons of the year the dietary includes a surprisingly large amount of animal matter, a conspicuous part of which consists of insects of many kinds that are among the most injurious to crops and trees (Bull. No. 21, Bureau of Biological Survey, Washington, 1905).

6. CANADA SPRUCE PARTRIDGE OR GROUSE (Canachites canadensis canace). Confined to the evergreen forests of the northern part of the state, where it is in some places fairly common. It "drums" somewhat after the manner of the Ruffed Grouse. Its flesh often tastes of the pine needles upon which it feeds extensively.

The plumage is chiefly black and white. A narrow crescentic area of bare skin over the eye is bright red.

7. RUFFED GROUSE (Bonasa umbellus umbellus). Commonly called "Partridge" or "Pheasant." The "drumming" of the Ruffed Grouse was

RUFFED GROUSE COCK

Strutting

once a common and inspiring sound throughout the length and breadth of the wooded areas of Minnesota. But many of the old haunts have long since grown silent and the "pheasant's drum" has become a strangely curious sound to the newer generations. This, the finest of our game birds, is growing deplorably less numerous and is now practically absent from large tracts where it was once abundant. Several causes have contributed to its disappearance, but the chief cause undoubtedly has been incessant and relentless persecution by a veritable army of hunters. In the early fall, before the coveys have separated entirely, broods may be quickly and easily exterminated with the aid of a barking dog, as the birds "tree"

CANADA SPRUCE GROUSE

Photograph of wild bird from life

at once when thus flushed and sit rigidly upright in plain view until all may be shot one by one. Of recent years the later opening date of the season and an awakening spirit of true sportsmanship have remedied this to a considerable extent. But there is still much illegal and pothunter-like shooting of this coveted bird in the seclusion of the forests and thus a too heavy toll is taken of a species that withstands with difficulty the altered conditions attendant upon man's usurpation of the land. A vigorously enforced long close season and re-stocking on a large scale are the only means of saving this bird.

Two sub-species of the Ruffed Grouse—the more southern form and the Canadian or Gray form—are represented in Minnesota and here intergrade in such a manner that every conceivable phase of coloration is found in our territory.

*8. **PRAIRIE CHICKEN: PINNATED GROUSE: PRAIRIE HEN (Tympanuchus americanus americanus).** If history is correct, the Prairie Chicken was not formerly a conspicuous native bird of Minnesota if present at all, but in early times found its way here with the first advance of civilization and attendant grainfields, from its native habitat on the plains of Illinois and adjacent territory. It supplanted the indigenous Sharp-tailed species in southeastern Minnesota as the latter retreated before the very civilization that brought the Prairie Chicken, and advanced westward and northwestward across the state, reaching the Red River Valley in the late seventies or early eighties (see Coues' "Birds of the Northwest," 1874, p. 410, for earliest history). It is not very uncommon for a bird thus to follow the advance guard of civilization and increase greatly in numbers at first, to be killed off later even to the point of extermination, by the very agency that fostered it in the beginning.

Today the Prairie Chickens in Minnesota are reduced to a mere remnant of what they were forty or fifty years ago when the "booming" of the cocks in the mating season resounded through all the southeastern and central part of the state. In the winter season the Chickens assemble in great flocks, or "packs," and when the weather is particularly severe retire to the cornfields and milder climate of Iowa.

It is to be hoped that a long close season will be inaugurated in the immediate future as an attempt to stay the otherwise inevitable disappearance of this valuable game bird.

9. **PRAIRIE SHARP-TAILED GROUSE (Pedioecetes phasianellus campestris).** Now absent from or merely accidental in the southeastern part of the state, where in very early times it was common and then the only prairie hen in that region. Over the rest of the state, especially northwest, it exists in moderate numbers where it was once very abundant. It is rather more an inhabitant of brushland than the Prairie Chicken. Sportsmen frequently call this bird by the name "Grouse" as a distinction from "Prairie Chicken."

The V-shaped marks in place of bars on the breast, absence of neck tufts, and the two long central tail feathers serve to distinguish this species from the last.

This bird should be included in any close season that may be established.

*10. **ENGLISH PHEASANT (Phasianus colchicus).** This introduced species exists in small numbers in the wild state in southeastern Minnesota, but does not seem to be increasing very rapidly. It may be of interest to know that the so-called English Pheasant was originally a native of Asia Minor, whence it was introduced into Europe by the Greeks and later into England by the Romans, where it has been crossed and intermingled with Chinese and Japanese species, so that the stock imported into the eastern United States is of this mixed breed (Chapman).

11. **GOLDEN EAGLE (Aquila chrysaetus).** Confined chiefly to the northern wilder portions of the state, where it is becoming rare.

The legs are feathered to the toes in this species, while in the Bald Eagle the lower half of the tarsus, or shank, is bare.

*12. **SHORT-EARED OWL: MARSH OWL (Asio flammeus).** A medium-sized owl, about 16 inches long, of yellowish brown appearance and inconspicuous ear tufts. This is a bird of the open country, frequenting marshes and meadows, where it hunts for its prey of mice and other small mammals after the manner of the Harrier or Marsh Hawk. It is often seen beating back and forth in such places in the full light of the day. Found in open country throughout the state, most commonly in the southwestern and western counties. Some years ago E. L. Brown, of Warren, reported this species as the most common owl of Marshall county, in northwestern Minnesota.

*13. **BARRED OWL (Strix varia varia).** Common in heavy timber. No tufts on head, eyes brown, breast barred crosswise and belly and sides lengthwise with white and grayish-brown. Length, 20 inches.

While this owl does some damage to poultry and wild birds, it is entitled to protection because of the many mice and other small harmful mammals and large insects that form the principal part of its food.

14. **GREAT GRAY OWL (Scotiaptex nebulosa nebulosa).** A huge owl with no ear tufts, bill and eyes yellow, under parts streaked throughout with white and grayish-brown. Length,

27 inches. Found only in the wildest, densest timbered part of the state, chiefly far north, and nowhere very common. Once in a long time a winter occurs when so many of these great owls make their appearance that it indicates a considerable migratory movement from regions further north.

*15. **SAW-WHET OWL (Cryptoglaux acadica acadica).** The smallest of our owls, only 8 inches in length. No ear tufts. The top of the head finely **streaked,** the back **spotted,** with white. It is resident throughout the state, but is not very frequently seen. Its note is described as rasping, like the sound made in filing a saw. It feeds chiefly upon mice and is strictly nocturnal in its activities.

*16. **SCREECH OWL (Otus asio asio).** A little owl between 9 and 10 inches long, provided with ear tufts. It occurs in two color phases—red and gray—without reference to age or sex. It is quite common and may often be detected peering out of a hole in a tree which it has chosen as its winter home. Its mournful quaver-

chosen as its winter home. Its mournful quavering notes are a familiar evening song about the country home. Mice constitute its chief food in winter with the adidtion, in the summer time, of large numbers of specially injurious insects, which it often catches on moonlight nights by sallying out from tree tops after the manner of many diurnal birds. It deserves the most careful protection.

SCREECH OWL
Photograph from life, Roberts

*17. **GREAT HORNED OWL (Bubo virginianus virginianus).** This great Owl, which has been termed the "tiger among birds" is fairly common in all the heavy wild timber of the state, and in the winter season no doubt destroys a great many Ruffed Grouse, especially if rabbits are scarce. Its fondness for the tender flesh of the latter destructive animal seems to be the chief redeeming feature in its character, considered from an economic standpoint. Its yellow eyes, big tufted head, and great size serve to distinguish it.

A sub-species, the Arctic Great Horned Owl, with white and gray largely replacing the buff and black of **virginianus,** occurs in the northern part of the state, probably only a winter visitant.

*18. **HAIRY WOODPECKER (Dryobates villosus villosus).** Common throughout the state, showing a preference for the denser woods and tamarack and spruce swamps. The birds in the extreme northern part of the state are somewhat larger than those found further south and belong to the sub-species, **Dryobates villosus leucomelas,** NORTHERN HAIRY WOODPECKER.

*19. **DOWNY WOODPECKER (Dryobates pubescens medianus).** Very common. With the exception of the Nuthatch this is, perhaps, the most frequently seen of all birds in mid-winter. It is in appearance a perfect diminutive of the last species, except that the white outer tail feathers are barred with black instead of being pure white as in the Hairy.

These two Woodpeckers perform a service of incalculable value to man by the untiring warfare they wage upon the insects destructive to shrub and tree. All winter long they may be seen beside the walk, upon the lawn, in the more retired groves of the suburbs or in the woodland wild, industriously at work on the infected trees; and their presence is sufficient evidence of the existence of the insects or their eggs.

DOWNY WOODPECKERS
Photograph from life, Roberts

They waste no time or strength digging holes in sound trees. The name "Sapsucker" is sometimes applied by the uninformed to these birds, but it is a misnomer and not deserved. They are neither sap nor bark eaters. The real culprit is the Yellow-bellied Woodpecker or Sapsucker **(Sphyrapicus varius varius),** a bird that in the spring time drills large holes in rows around the trunks of trees and saplings. These punctures penetrate the inner layer of bark and allow the sap to run out often in such quantity that the whole lower trunk of the tree is saturated with the liquid. The sap thus released forms a considerable part of the diet of this Woodpecker, and the miscreants may be seen going from tree to tree, clinging to the bole and drinking the liquid that collects in the punctures. The Sapsucker is not a winter bird in Minnesota, but is all too common at other seasons of the year.

20. **ARCTIC or BLACK-BACKED THREE-TOED WOODPECKER (Picoides arcticus).** A common bird in the evergreen forests of the state. They extend their range somewhat southward in the winter time and very rarely an individual may be found as far south as Hennepin county. This and the next species have,

as the name implies, only three toes, while all of our other woodpeckers have four—two in front and two behind. The male of these two species has a square yellow patch on the top of the head. The back in the present bird is clear black, while in the next it is barred with black and white, from which it is sometimes called the "Ladder-back." Where common they are very valuable aids in protecting timber against the ravages of the borers.

21. **AMERICAN THREE-TOED WOODPECKER (Picoides americanus americanus).** Found chiefly in the northern part of the state and there by no means commonly. It has been seen once—Nov. 26, 1915—at Cambridge, Isanti county, by Lawrence Lofstrom. The writer discovered a nest containing young at Lake Itasca in June, 1901. The Survey has but little information in regard to this species in Minnesota.

BLACK-BACKED THREE-TOED WOODPECKER
Itasca Park

Photograph from life, Roberts

*22. **PILEATED WOODPECKER: LOG COCK (Phloeotomus pileatus pileatus).** This, the largest of our Woodpeckers, still occurs sparingly in the heavily-timbered areas of the state. It was formerly common, but its numbers have been greatly reduced, partly through the clearing away of the big timber, but chiefly through the propensity of the average man with a gun to kill every large and curious bird that he encounters. Its disappearance is to be deplored, for it is a most valuable agent in the preservation of large timber.

*23. **RED-BELLIED WOODPECKER (Centurus carolinus).** A southern species that occurs in small numbers in southeastern Minnesota, where it is a permanent resident. Individuals occasionally wander as far north as Meeker county (H. J. Jager) and it has several times been seen in the vicinity of Minneapolis, but is chiefly confined to an area marked by Rochester on the west (Mrs. W. C. MacCarty) and Red Wing on the north (Miss Mabel Densmore). The male has the whole top of the head and the nape a bright scarlet and the entire back is banded crosswise by numerous bars of black and white which is quite unlike any of the other winter woodpeckers.

*24. **BLUE JAY (Cyanocitta cristata cristata).** Common all winter but in early spring their numbers are greatly augmented by the return of birds that must have wintered further south. They will eat almost anything during the cold season, not scorning even kitchen scraps, which they boldly appropriate from the refuse heaps. They are usually seen in little companies of several individuals hunting together, and their screams and calls are often the only loud bird notes that disturb the frozen silence of the deserted winter woodland.

25. **CANADA JAY (Perisoreus canadensis canadensis).** Also called by the familiar appellations, Moose-bird, Camp-robber, Whiskey-jack, Whiskey-john, etc. A common and familiar bird in the evergreen forests of the northern half of the state. It boldly forages about camps and dwellings and often annoys hunters by following them, uttering its loud and disturbing cries of which it has an extensive and varied repertory. Lawrence Lofstrom reports this bird from Cambridge, Isanti county, which is much farther south than any previous record for the state. The Canada Jay builds its large and warmly lined nest in the deepest recesses of spruce and arbor vitae swamps in the latter part of February, while the snow is still deep on the ground and the weather bitter cold.

26. **NORTHERN RAVEN (Corvus corax principalis).** An inhabitant of the northern part of the state, occasionally wandering into the southern counties. Not common. Often hangs about lumber and other camps looking for food. In October and November, 1876, a number of Ravens appeared in the vicinity of Minneapolis and a specimen secured at the time by the writer is in the Survey collection. The Raven is much larger than the Crow, 22 to 26 inches as compared with 20, and the feathers of the neck are long and pointed in a peculiar manner.

*27. **ENGLISH SPARROW (Passer domesticus domesticus).** This undesirable alien is now abundant throughout the state and has everywhere spread from the towns to the country. It made its first appearance in Minneapolis in the fall of 1876, but had previously been purposely introduced elsewhere in the state. The replacing of horses with automobiles may result in the

diminution of this bird in this land of protracted snow, or force it to redeem itself to some extent by turning to weed seeds as a considerable part of its winter diet.

*28. **AMERICAN CROSSBILL (Loxia curvirostra minor).** Abundant in the northern evergreen forests of the state. Occasionally wanders through the southern part in little straggling flocks. Its rather small size, its crossed scissor-like bill, and the brick red plumage of the male serve to identify it.

*29. **WHITE-WINGED CROSSBILL (Loxia leucoptera).** Not so common as the last; distribution about the same. Two white wing-bars and the rose red plumage of the male distinguish it.

*30. **WHITE-BREASTED NUTHATCH (Sitta carolinensis carolinensis).** Common everywhere in the city, village and woodland. Its little trumpeting note may be heard throughout the coldest seasons, and its constant search for insect eggs and larvae, up and down the trunks and limbs of trees, results in great benefit to mankind.

*31. **CHICKADEE: BLACK-CAPPED CHICKADEE (Penthestes atricapillus atricapillus).** Common throughout the state. Hardy, cheery, familiar, and its food habits make it a very valuable bird to man.

A western sub-species with a somewhat longer tail, known as the Long-tailed Chickadee, has been reported along our western boundary, but this matter needs further investigation.

BLACK-CAPPED CHICKADEES
A Family of Six Posing for a Picture
Photograph from life, Roberts

32. **HUDSONIAN CHICKADEE (Penthestes hudsonicus hudsonicus).** Occurs regularly only in the northern part of the state, where it is apparently rather common, in some localities. Several birds of this species were unexpectedly seen by Lawrence Lofstrom as far south as Cambridge, Isanti county, in November, 1915. Distinguished from the common Chickadee by its brownish cap and different notes.

WINTER VISITANTS.

Included under this head are birds that enter the state from the north to winter here or further south. Some of these appear during the early fall and linger far into the spring months.

1. **RED-THROATED LOON (Gavia stellata).** Occurs in commonly on Lake Superior and on the large rivers when they remain unfrozen. Has been secured by Storey at Duluth and by Whit Harrison on the Mississippi River at La Crescent, Minn.

Considerably smaller than the common Loon, but the plumage in winter differing only in the feathers of the upper parts, being spotted instead of margined with white.

The Black-throated Loon is probably a very rare winter visitant to the state, as it has been taken several times on the Mississippi River in Iowa (Anderson, Birds of Iowa, 1907), but no Minnesota specimens are known. It is a trifle larger than the Red-throated Loon (27 instead of 25 inches, the common Loon being 32 when full-grown) and differs otherwise in the winter plumage only in having the feathers of the back margined with gray instead of spotted with white. In full breeding plumage the Loons have plainly distinctive markings, but as they occur here in their winter dress they look so much alike that they cannot be safely determined out of hand.

2. **OLD SQUAW: LONG-TAILED DUCK (Harelda hyemalis).** When Lake Superior remains unfrozen this little duck often occurs there in considerable numbers and may also be found elsewhere where there is open water of any extent. In the winter of 1903-4 Lake Superior froze over rather suddenly and the Old Squaws perished in large numbers, seemingly unable to get away in time (Thos. Storey, Duluth). Some of them wandered inland as far as Aitkin looking for open water and fell exhausted in the forest (Albert Lano).

As it occurs in winter, the plumage in the male is white with dusky areas about the head and the back and a broad black patch underneath. The two central tail feathers are narrow and much elongated. The female is duller and lacks the clear black areas and the long tail feathers.

*3. **GOSHAWK (Astur atricapillus atricapillus).** The hawk most frequently seen in winter. "This species is one of the most daring of the Hawks, and while in pursuit of its prey is apparently less concerned with the presence of man than any other. It will dart down unexpectedly at the very feet of the farmer and carry off a fowl" (Dr. Fisher; Hawks and Owls of the United States). It feeds largely, in winter, upon rabbits and no doubt takes a considerable number of grouse.

The Goshawk is probably a summer resident and may nest in the northern part of the state, but positive data are lacking. Further south it is strictly a winter bird.

A little larger than the common Red-tailed Hawk—22 to 24 inches. Generally grayish in color, darker above, and below finely waved throughout with light gray and white. Immature birds are quite different in appearance; brownish and buffy, with under parts heavily streaked with black on a white or light buff ground; tail barred.

*4. **ROUGH-LEGGED HAWK (Archibuteo lagopus sancti-johannis).** A not uncommon hawk in the northwestern part of the state where it is possibly a summer resident and nesting in limited numbers. Further south and east it is less frequent and seen usually during the late fall and early spring, and now and then during the winter. Lanesboro, Fillmore county, one killed Dec. 26, 1889 (Dr. Hvoslef).

About the size of the common Red-tail—22 inches long—dark above and light below where it is streaked and spotted, especially behind, there forming a broken dark band. The distinguishing features are the complete feathering of the tarsus, or shank, in front and the heavily marked under parts. There is a dark phase in which the plumage is practically black throughout.

The Ferruginous Rough-leg, a western species so closely related that it is difficult to distinguish except on close examination, probably enters the state occasionally from its home in the Dakotas.

*5. **GRAY GYRFALCON (Falco rusticolus rusticolus).** A rare visitor from the far north. There are two other sub-species of the Gyrfalcon either of which may occasionally enter Minnesota, but the specimens so far taken are referable to **F. r. rusticolus.** Madison, Lac qui Parle county, Dec. 11, 1894, female shot, "stomach contained remains of a Prairie Hen." (Albert Lano, Auk, XIX, April, 1912, p. 239.)

The Gyrfalcons have long pointed wings, are trim, keen looking birds and are bold and powerful hunters. A magnificent white species over two feet long is found in the Arctic regions. Our bird is 20 inches in length; dark above, barred with white on back, and is white below, heavily streaked or spotted throughout.

*6. **SNOWY OWL (Nyctea nyctea).** Generally distributed over the prairie and more openly wooded portions of the state in the winter season, but it is only during an occasional winter that it is at all common. It may appear in the southern part of the state as early as October (Minneapolis, Oct. 15, 1876) and sometimes remains as late as the second week of May.

J. N. Sandford reported one in Grant county, May 10, 1879. Dr. L. O. Dart secured a female shot near Litchfield, Meeker county, on June 3, 1890, and states that a second bird was seen at the same place a day or two later—a most exceptional occurrence.

It is a large and wary bird of powerful, rapid flight and capable of including in its usual dietary of mice and small birds, such larger quarry as chickens and rabbits. It hunts by day as well as at night.

Two feet and over in length; colors white, barred with dark brown and black; eyes yellow; legs and feet heavily feathered.

*7. **RICHARDSON'S OWL (Cryptoglaux funerea richardsoni).** A little owl 10 inches long, without ear tufts; upper parts grayish-brown spotted throughout with white; under parts white, heavily streaked with brownish. It occurs chiefly in the northern part of the state, where it was found as late as April 13, 1899, by P. B. Peabody. Now and then it wanders in limited numbers to the southeastern counties where it may appear as early as October and remain as late as early March. Minneapolis, Oct. 20, 1895, a specimen taken by H. M. Guilford. Lanesboro, Fillmore county, Jan. 19, 1885 (Dr. Hvoslef). Cambridge, Isanti county, Jan. 31, 1914, and Mar. 1, 1914, (Lofstrom, Auk, XXXII, Oct. 1915, p. 502).

A bird of this species that I kept in captivity for some time uttered at night a series of soft eerie whistling notes that were so ventriloqual in character that it was difficult to locate the source.

*8. **HAWK OWL (Surnia ulula caparoch).** A medium-sized diurnal owl that occurs sparingly throughout the woodlands of the state, though apparently more numerous in the northern forests. It is a bird of swift, strong flight, and for its size, of much prowess. I have seen it in full pursuit of a tame pigeon, the chase leading with terrific speed to and fro in great zigzags, and at times high into the air over a tamarack swamp where the owl was making its temporary home. The pigeon escaped through its superior agility, but was hard-pressed for a time. This occurred in bright sunlight at midday. When sitting quietly in the woods it is a tame and indifferent bird.

Vernon Bailey reports seeing ten of these owls in the vicinity of Elk River, Sherburne county, between Oct. 27, 1884, and Jan. 1, 1885, an unusual record. E. L. Brown wrote they were common in Marshall County in the fall of 1888.

The Hawk Owl is 15 inches long; ashy brown and white, barred below and on back, and spotted on top of head and hindneck; breast white with middle dark patch on throat; no ear tufts; tail long and rounded.

*9. **EVENING GROSBEAK (Hesperiphona vespertina vespertina).** A regular visitant each year from its summer home in the far north, but its abundance varies greatly in different seasons. It is rather local in is distribution, flocks establishing themselves in localities where food is plenty and remaining there often through the winter. It usually arrives in little parties which seem to assemble and merge toward spring, when flocks of a hundred or more may sometimes be encountered. They are tame and unsuspicious and enter towns and cities without fear. Their food is chiefly such seeds and small fruits as remain hanging on trees and shrubs, the keys of the box-elder forming a very considerable part of their diet. Their notes while here are a clear loud pipe and a weak screaming effort which when uttered in unison by a large flock in early spring produce a curious medley not unlike the piping of a lot of frogs. The early dates at which they sometimes arrive in Minnesota and the lateness of their departure in the spring are surprising when the distance they must travel to and from their remote nesting places is considered. The earliest and latest dates are: Sept. 6, 1915, Isanti county (Lawrence Lofstrom), and May 18, 1879, Minneapolis (T. S. Roberts).

The large, thick-set, greenish bill will serve to distinguish this bird in any plumage. The spring male with his dress of glossy black, white, yellow and dusky olive is a strikingly handsome fellow.

*10. **PINE GROSBEAK (Pinicola enucleator leucura).** A regular though never very numerous visitant to the northern part of the state, but further south it appears only infrequently and usually in flocks of but a few individuals. An exceptional occurrence was its presence in and about Minneapolis in the winter of 1874-1875 in considerable numbers, and again in the winter of 1880-1881. It makes its appearance in the southern part of the state in the latter part of November or early in December, and retires northward in March (Minneapolis, Mar. 13, 1875; Mar. 7, 1879). They have a mellow, sweet whistle and while here utter low subdued snatches of a pleasing song. Their food consists largely of sumach berries, mountain-ash berries, highbush cranberries, etc. It is the seeds, not the pulp, of these berries that they eat and this Grosbeak is as expert in removing the pulp of the high-bush cranberries and cracking open the single large flat seed that they contain, as is the Evening Grosbeak, with its clumsy looking bill, in its manipulation of the keys of the box elder to remove intact the meaty kernel within.

The Pine Grosbeak is a little less in size than the Robin. Most of the individuals of a flock are slate-colored, overlaid on the breast and rump with brassy yellow or reddish. These are the females and immature males, but there are usually a few old males resplendent and conspicuous in a full dress of carmine red. The bill is short and stout; the tail forked.

11. **HOARY REDPOLL (Acanthis hornemanni exilipes).** Has been reported thus far only from three localities in the state: Kittson county, by Peabody; Otter Tail county, by Barker, and Isanti county, by Lofstrom. Said to be common some winters in the northwestern part of the state and absent others.

To be distinguished from the next, our common Redpoll, by its generally whiter appearance, unstreaked rump, and sparingly marked under parts.

*12. **REDPOLL (Acanthis linaria linaria).** A regular and usually abundant winter visitant, remaining in large flocks throughout the coldest seasons. They frequent weedy fields and pastures and tamarack swamps. It is a cheery, spritely little bird with pleasing notes and unsuspicious character. They appear in the southern part of the state about the first of November and remain until April (Minneapolis April 18, 1875).

The Redpoll is about the size of a canary, 5½ inches long, with a black chin patch and a crimson crown patch, while the male in full plumage is distinguished by a delicate rose-red flush over the entire breast.

A sub-species, somewhat larger and stouter, known as the ***GREATER REDPOLL (Acanthis linaria rostrata)** has been taken in northwestern Minnesota by Peabody and at Minneapolis in February and March of 1890 by Fred Cook (specimens in survey collection).

*13. **SNOW BUNTING (Plectrophanes nivalis nivalis).** Common in large flocks, usually most abundant in late fall and early spring during the vast movements across the state to and from the prairie regions south of us. A beautiful and fascinating sight is a great flock of hundreds of Snowflakes whirling and eddying about, in the intricate aerial evolutions in which they seem to delight. One moment they are a flashing, glittering spectacle, the next with a sudden turn they all but disappear from view, to reappear in an instant like a great shimmering mantle. This sight was much more frequent in Southeastern Minnesota many years ago than it is today, for the Snow Bunting is, for some reason, much less common than formerly. Perhaps the vast weedy cornfields of Iowa lure them further south of late years.

The first of the Snowflakes arrive in southern Minnesota from the middle to the last of October (Minneapolis, Oct. 16, 1875) and the last pass northward in April, though stragglers may be encountered as late as May (Minneapolis, May 14, 1875; May 5, 1876).

In size the Snowflake is little larger than an English Sparrow. The plumage is much variegated with **white,** black and rusty brown in the fall and winter, but as spring advances becomes, in the male, almost pure white, relieved only by the jet black of the wings and tail.

***14. LAPLAND LONGSPUR (Calcarius lapponicus lapponicus).** Very similar in habits and manner of occurrence to the Snow Bunting. The Longspurs, however, appear in much larger numbers and the great flights that pass to and fro over the western part of the state are of almost inconceivable proportions. Some idea may be gathered from the details of a tragedy that happened to this species several years ago as the northward spring flight was in progress across Northwestern Iowa and Southwestern Minnesota. Late in the evening of March 13, 1904, the moving Longspur hosts, when fatigued and without food, encountered a night of inky blackness and a heavy fall of wet snow. Becoming confused and wet, and weighted down with the soft snow, they dashed to their death against the frozen ground, ice-covered lakes, and various obstacles, in such vast numbers that on the bare ice of two small lakes at Worthington, Minn., there lay, by careful estimate, the crushed bodies of over 750,000 of these unfortunate little wayfarers. When it is added that inquiry developed the information that this destruction extended over an area of approximately 1,500 square miles, it will be seen that the total number of Longspurs killed that night runs into a figure almost beyond belief—certainly several **millions.**† Reports subsequently received from this same region stated that there was no appreciable diminution in the Longspur legions in subsequent years.

Both this species and the Snowflake render the farmer a great service in the destruction of many tons of weed seeds as they derive a considerable part of their sustenance from this source during the time of continuous snow.

The Longspur has an erratic, jerky flight. When on the ground it is a close sitter and springs up at ones feet with a characteristic sharp metallic chirp. Toward spring a whole flock will often indulge in a concerted melodious performance consisting of soft whistles and fragments of a sweet song.

The Lapland Longspur appears in Hennepin county as early as September (Sept. 29, 1875; Sept. 30, 1880) and the last usually leave in late April, though, like the Snow Bunting, individuals may occasionally linger into May (May 3, 1875; a flock May 11, 1877).

A little smaller than the Snowflake and much darker in color. The male towards spring has the head, throat, neck and breast black, but during the fall and winter the black is largely concealed by light edgings to the feathers. A rufous patch on the back of the neck. The female is similar to the winter male but lacks distinctive

†For full account and photographs see The Auk, 1907, pages 369-377.

DEAD LAPLAND LONGSPURS ON ICE OF LAKE AT WORTHINGTON, MINN., WHERE THEY FELL DURING A STORM ON THE NIGHT OF MARCH 13-14, 1904.

From The Auk

black markings. In flight the two outer tail feathers show much white. The hind toe-nail is much elongated, from which feature comes the name.

***15. BOHEMIAN WAXWING: CHATTERER: NORTHERN WAXWING (Bombycilla garrula).** An irregular, though at times, abundant, visitor from the north. They sometimes appear in such numbers that the winter is remembered as a "waxwing year," as, at Minneapolis, in the winters of 1874-1875 and 1879-1880, when many large flocks remained about the city for several weeks. Their erratic and uncertain movements have won for them the name Bohemian.

The Chatterer may be looked for in Southern Minnesota from Nov. 15 to Dec. 15, and may remain until the middle or latter part of April (Minneapolis, April 25, 1876; April 12, 1877; April 14, 1880.) It sometimes appears in abundance in March and April when it has not been seen during the previous winter.

They associate in flocks, often of large size, and during their sojourn here live not uncommonly about our cities and towns, being quite tame and unsuspicious. Their beautiful crests and rich smooth plumage give them a jaunty, trim appearance which has brought them into more general notice, perhaps, than any other one of our winter birds. The resemblance between the Northern Waxwing and the common Cedar or Cherry Bird is very close, but they may be distinguished by the greater size and darker color of the former, and the fact that it has considerable white and often some yellow markings on the wing, that are wanting in the Cedarbird. Some individuals of both species have dark red wax-like appendages on the tips of the inner wing feathers and occasionally on the tail feathers. This adornment on the wings of the Northern Waxwing in contrast with the white and yellow markings imparts a specially rich and beautiful appearance. The two species may sometimes be seen in early spring associating together in the same flock.

The food of the northern birds while here consists of mountain ash berries, wild grapes, smilax berries, wolf-berries, high-bush cranberries, decayed fruits and other refuse vegetable matter that may be thrown out where they can get it. But as spring opens, their food becomes largely insectivorous and their habits accordingly undergo a marked change. They are no longer so familiar or such frequent visitors to back yards and alleyways; but are instead much more retiring and refined in habits. They capture the insects on the wing in the manner of Flycatchers and a whole flock may often be seen thus engaged for an hour or more at a time. Stomach examinations have shown that the insects thus taken consist mainly of minute beetles, thousands of which must appear in the air with the disappearance of the snow.

***16. GREAT NORTHERN SHRIKE: BUTCHER BIRD (Lanius borealis).** In the northern three-fourths of the state seen chiefly during the fall and spring migrations, but in the southern tiers of counties remains quite regularly throughout the winter though only in moderate numbers. In the winter season it lives upon mice and small birds, among the latter a goodly number of that pest, the English Sparrow. The Butcher-bird has a loud whistled call and with the advent of spring a remarkable "catbird-like" song that is unexpected from a bird of such hawk-like and predaceous character.

Its colors are black, white and gray and it has a strong hooked bill, but its feet are weak so that it has to impale its prey upon suitable "hooks" in order to tear it to pieces.

HALF-HARDY SPECIES.

The birds included in this subdivision might perhaps be distributed under the two previous headings. But they are grouped here to indicate that they are not really hardy winter birds in Minnesota, their continued presence during the cold season being determined by the character of the weather. Long continued, severe cold forces them from the state or results in their disappearance by death. For example, the Brown Creeper was fairly common in Hennepin county during the early part of the winter of 1912-1913, but later during an intense and continued cold spell many were found dead and no more were seen the rest of the winter. If food is abundant, all the following species can survive short spells of even intense cold but they are not truly hardy birds. Sheltered places in the extreme southeastern part of the state are where they are most commonly to be found. With the exception of the Tree Sparrow they all breed within the state and so when they remain throughout mild winters, as they frequently do, they are permanent residents.

***1. RED-TAILED HAWK: HEN HAWK (Buteo borealis borealis).** Uncommon in the winter time, but after a week of mild weather in January or February it may sometimes be seen in the southern part of the state, sailing about in leisurely circles.

Of large size, nearly two feet long, with rufous-red tail barred with black and white at end. A nearly white form called Krider's Hawk, and a nearly black phase called Harlan's Hawk, occur in the state, the latter very rarely. There are no winter records for either of these "sub-species."

***2. PRAIRIE HORNED LARK (Otocoris alpestris praticola).** When the winter in Southern Minnesota is mild and open, so that there are snowless patches in fields and prairies,

a few Shore Larks, as they were formerly called, are venturesome enough to take the chances of being caught by a "cold snap" or heavy snows. But they are never numerous unless the winter be exceptionally mild and free from snow. With the brighter suns and melting middays of late February almost always a few have pushed as far north as Hennepin county and their hopeful, spring-like song seems at times strangely out of place with piles of snow and ice still unmelted. This is the very first of our ground-nesting birds to build and not infrequently the frail structure may be found beside a drift of snow and all too often this hasty action is doomed to failure through the freezing and bursting of the eggs.

The black stripe under the eye, the black breast-patch, and the little black tufts or "horns" on either side of the head will suffice to distinguish this bird; nearly 8 inches in length.

A sub-species called **Hoyt's Horned Lark** has been taken in Western Minnesota (Albert Lano). It is larger and yellower and breeds north of the United States.

***3. CROW (Corvus brachyrhynchos brachyrhynchos).** The Crow may be seen late in the fall migrating southward in great noisy flocks. But a few usually remain in the southern third of the state through the winter if the weather is not too continuously and intensely cold. Occasional individuals brave the worst weather, usually in the vicinity of slaughtering places.

***4. PURPLE FINCH (Carpodacus purpureus purpureus).** Occasionally present in small flocks in Southeastern Minnesota, throughout the winter when the weather is mild, and sometimes appears in February when the cold is still intense. The male is rosy-red, obscurely streaked; wings and tail brownish. The female and young, dull-colored throughout, body streaked. Length 6¼ inches; tail forked.

***5. GOLDFINCH: THISTLE BIRD: "WILD CANARY" (Astragalinus tristis tristis).** Usually common in the southern part of the state until the middle of December and frequently seen during the winter, especially if the weather is moderate. Dr. Hvoslef reported them as abundant in large flocks at Lanesboro, Fillmore county, all through the mild winters of 1888-1889 and 1892-1893, when they, in common with other less hardy species, found plenty of food and shelter in the deep and wooded valley of the Root River. This and the Pine Siskin are especially fond of sunflower seeds, and a patch of the garden variety left standing will attract and hold a goodly assemblage of them until the supply is exhausted. The White-breasted Nuthatch will also put in an appearance under such circumstances and take its share, hammering out the kernels in the bark-crevices of a nearby tree.

The flight is undulating, the call note a querulous **"per-chic-o-ree,"** and as spring comes the male sings a varied, pleasing song.

In winter, a brownish bird with black wings and tail; but toward spring the brown is replaced in the male by bright yellow with a black crown-patch.

***6. PINE SISKIN: PINE LINNET (Spinus pinus pinus).** A bird of wandering erratic habits, sometimes appearing irregularly in small companies during mild winters, and occasionally common in December and late February. It is a dull-colored, streaked, nondescript looking bird, to be recognized by the presence of sulphur-yellow patches at the base of the wing and tail feathers. Small, five inches long.

***7. TREE SPARROW (Spizella monticola monticola).** This boreal nesting bird passes through the state in spring and fall in vast numbers, and from the migrating fall-host a comparatively few elect to remain in sheltered nooks in Southern Minnesota through the winter. Too severe weather sends these loiterers on to join the more numerous company in the weedy fields and waste places of Iowa. Wherever they are they gain their sustenance through the winter from the seeds of various plants—mostly noxious weeds. Therefore, they are a valuable asset to the farmer. Prof. F. E. L. Beal of the Biological Survey in Washington has estimated, after a careful analysis of all data, that the Tree Sparrow consumes, during its winter sojourn in the state of Iowa alone, the immense total of 1,750,000 pounds, or about 875 tons, of weed seeds. (Yearbook of Dept. of Agr. for 1898, page 226). They eat such a large proportion of the seeds of such pests to the farmer as pigeon grass, crabb grass, poverty grass, rush grass, ragweed, pigweed, lamb's quarter, and bindweed, that the small amount of grain and seeds of beneficial grasses taken is of trifling moment.

A reddish-brown bird, somewhat larger than a Chipping Sparrow, with a chestnut crown and a **dark breast spot** on the otherwise plain dull white underparts.

***8. BROWN CREEPER (Certhia familiaris americana).** This delicate appearing little bird can usually be found fairly common in Southeastern Minnesota in the early part of the winter, and if the cold does not become too intense a few remain until the many that went further south in the fall return with the other migrants in late March and April. But continued bitter weather during the winter months sends these venturesome ones southward or leads to their destruction. Lawrence L. Lofstrom in his article on birds of Cambridge, Isanti county, says of this species: "Permanent resident. A few winter in the tamarack and spruce woods where they are

protected from cold winds." (The Auk, Vol. XXXII, Oct., 1915, page 505.)

A slender small brownish bird with a long tail. It ascends the trunks of trees always in a spiral path as it pursues its industrious search for the insect food hidden in the crevices of the bark.

***9. RED-BREASTED NUTHATCH (Sitta canadensis).** A common migrant spring and fall, and a few nesting in Northern Minnesota. Occurs rather sparingly in the southeastern part of the state throughout mild winters.

It is smaller than the common Nuthatch and may also be readily distinguished by its black cheek band and rusty underparts. It's "trump" is weaker and more nasal in quality.

***10. GOLDEN-CROWNED KINGLET (Regulus satrapa satrapa).** Abundant as an early and late migrant but has been recorded definitely as a winter bird from only two localities. Lawrence L. Lofstrom found them "quite common" in pine and spruce woods just north of Cambridge, Isanti county, throughout the winter of 1914-1915 (The Auk, Vol. XXXII, Oct., 1915, page 505); and H. J. Jager saw several on the court house lawn at Owatonna, Steele county, on Dec. 20, 1908.

An olive-green little bird, only about four inches long, the top of the head, in the male, adorned with a flaming orange-red patch, bordered with yellow and black; the orange center being absent in the female.

ACCIDENTAL SPECIES.

Included in this list are species that have no proper place in the winter bird-life of Minnesota but of which individuals have been noted between Dec. 1 and Mar. 1, either as purely chance wanderers or belated fall migrants, or spring arrivals that have pushed ahead of the general movement of their kind. They are never of regular or frequent occurrence no matter what the weather and are always out of place as far north as Minnesota in the winter season.

1. LOON (Gavia immer). Remains rarely on Lake Superior and still more infrequently lingers about open places in the larger lakes and streams into December.

2. HOODED MERGANSER: SAWBILL: FISH DUCK (Lophodytes cucullatus). Occasionally found where there is open water in the winter season.

3. MALLARD: "GREEN HEAD" (Anas platyrhynchos). Flocks sometimes remain about open places in the southern lakes and streams into December or even later. At such times they usually repair to neighboring cornfields for food. About four hundred stayed at Heron Lake until Dec. 15, 1910, and seventy-five until Dec. 21, 1911, (Abe Nelson, guide). Lanesboro, Dec. 11, 1890, (Hvoslef). During the winter of 1897-1898 a small flock spent the entire winter in open water below the dam in the Crow River near Hutchinson, feeding in neighboring cornfields. A pair were shot Feb. 15, 1898 (Dr. C. T. Cooke). Minneapolis, Dec. 3, 1879 (Roberts).

4. SHOVELLER: SPOONBILL DUCK (Spatula clypeata). Stray birds occasionally remain about open spring holes. Lanesboro, Jan. 11, 1892, one in spring brook (Dr. Hvoslef).

5. BUFFLEHEAD: BUTTERBALL: SPIRIT DUCK (Charitonetta albeola). Occasionally found on Lake Superior in winter. Two in Storey collection taken near Duluth, Jan. 20, 1900.

6. WHITE-WINGED SCOTER (Oidemia deglandi). Not infrequently seen on Lake Superior and in the rapids of the larger streams during winter.

Both of the other Scoters, the American and the Black, probably also occur during the winter but thus far definite records are wanting.

7. WHISTLING SWAN (Olor columbianus). Accidental. Seven stayed at Heron Lake until Dec. 15, 1910. They remained in the open places in the lake where they could reach the bottom to feed (Abe Nelson, guide).

8. FLORIDA GALLINULE (Gallinula galeata galeata). A bird of this species, apparently in good condition, was taken alive at a spring run in Glenwood Park, Minneapolis, on Jan. 23, 1915. Weather intensely cold.

9. WILSON SNIPE: JACK SNIPE (Gallinago delicata). Stray birds of this species may rarely be flushed from spring runs throughout the winter season in Southern Minnesota. Minneapolis, Dec. 15, 1875; Dec. 15, 1877; Jan. 17, 1879 (Roberts).

10. MOURNING DOVE (Zenaidura macroura carolinensis). Single individuals rarely brave the cold season even through the entire winter in Southeastern Minnesota. Lanesboro, Fillmore county, Jan. 16, 1898, "one or two frequently pass the winter in this vicinity" (Dr. Hvoslef). Red Wing until Jan. 5, 1905 (Miss Densmore). La Crescent, "have seen them in December and January" (Harrison). Minneapolis, Dec. 1, 1879 (Wm. L. Wolford).

11. SHARP-SHINNED HAWK (Accipiter velox). Rare. Lanesboro, Dec. 25, 1889 (Dr. Hvoslef). Minneapolis, Jan. 11, 1904, one shot (Wm. Kilgore). Parker's Prairie, Otter Tail county, about Jan. 1, 1912, one shot (Barker).

12. BALD EAGLE (Haliæetus leucocephalus leucocephalus). Very rare in winter. Minneapolis, Jan. 1, 1879 (Roberts).

13. PRAIRIE FALCON (Falco mexicanus). There is a single somewhat indefinite winter record of this western species taken in a trap near Benson (Cantwell, O. & O., Vol. XVI, Oct., 1891, page 157).

14. **BELTED KINGFISHER (Ceryle alcyon).** Lanesboro, Fillmore county, "It has frequently remained here through the winter in spite of vigorous and protracted cold and deep snows. Dec. 24 and 26, 1877; Jan. 22 and Feb. 12, 1888; Dec. 5, 16 and 30, 1888; Feb. 1, 1890. Feeding in open holes in Root River in spite of much snow and weather with thermometer down to —40 degrees." (Dr. Hvoslef). Owatonna, spent winter of 1900-1901 (H. J. Jager).

15. **RED-HEADED WOODPECKER (Melanerpes erythrocephalus).** Rare in winter. "Shot two in winter of 1887-1888 at Minneapolis" (Cantwell, O. & O., Vol. XIII, Feb., 1888). University campus in Feb., 1880 (Herrick). La Crescent, 'Has been known to stay all winter" (Harrison). Sauk Center, Stearns county, Dec. 10, 1908, one seen flitting from post to post along a fence (H. J. Jager).

16. **NORTHERN FLICKER: GOLDEN-WINGED WOODPECKER (Colaptes auratus luteus).** This abundant summer bird is seen very rarely in winter. "One individual seen last winter," 1887-1888, at Minneapolis (Cantwell, O. & O., Vol. XIII, Feb., 1888, page 28); Minneapolis, one seen Dec., 1906 (Edwin Brown); Otter Tail county, one found frozen to death, Jan. 20, 1912, just after an intensely cold spell (Barker); Faribault, Feb. 20, 1912 (Rev. F. L. Palmer).

17. **MAGPIE (Pica pica hudsonia).** An uncommon fall and winter straggler into the western part of the state. There is a specimen in the survey collection obtained from Fred Barker of Parker's Prairie, that was taken accidentally in a wolf trap in Effington township, southeastern Otter Tail county, in the latter part of Dec., 1910. A second survey specimen, presented by Mr. J. W. Franzen, was taken near Warroad, Roseau county. During the winters of 1910-1911 and 1911-1912 several Magpies were seen about farms along the Snake River in southwestern Marshall county, as many as five at one time at one place, and on a neighboring farm two remained the greater part of the winter of 1910-1911, feeding on the carcass of a dead horse. (O. A. Finseth, of Oslo). Two were seen by Mr. H. J. Jager in Redwood county on Jan. 7, 1914, and one was shot and several others seen in Douglas county (reported by H. J. Jager).

18. **RED-WINGED BLACKBIRD (Agelaius phoeniceus).** Single individuals and small flocks of these birds are occasionally encountered during the winter months in Southern Minnesota. Lanesboro, Jan. 27, 1889, a flock of three in a cornfield with a foot of snow on the ground (Dr. Hvoslef); Heron Lake, Feb. 27, 1898 (Miller); St. Peter, nine on Christmas Day, 1913, (H. J. and L. L. LaDue, Bird-Lore, XVI, Jan.-Feb., 1914, page 47); Red Wing, one seen Dec. 27, 1912, and one had been about for ten days or more preceding Jan. 30, 1915, having survived a cold spell when the mercury had more than once reached —32 degrees (Densmore).

19. **MEADOW LARK (Sturnella neglecta).** Rare in winter. "On the prairie near Pekin, Fillmore county, a **Sturnella** was seen singing on a fence yesterday. Very great masses of snow on the ground everywhere on the most exposed fields, thermometer 7 degrees in the morning" (Dr. Hvoslef, Feb. 27, 1885); Cottonwood county, Dec. 10, 1901, (H. J. Jager).

20. **RUSTY BLACKBIRD: RUSTY GRACKLE (Euphagus carolinus).** Madison, Lac qui Parle county, Jan. 19, 1891, one shot (Lano, O. & O., Vol. XVI, page 198); Heron Lake, fifteen stayed until Jan. 10, 1894 (Miller); New Richland, McLeod county, flock of twenty-five, Dec. 21, 1897, (Dr. C. T. Cooke); Lanesboro, Jan. 8, 1898, one (Dr. Hvoslef).

21. **BRONZED GRACKLE: CROW BLACKBIRD (Quiscalus quiscula aeneus).** Infrequent. Minneapolis, Jan. 13, 1876, flock of four (Roberts); one shot Dec. 3, 1887 (Cantwell); Jackson county, Dec. 5, 1894, few still present (Peabody).

22. **GRAY-CROWNED ROSY FINCH (Leucosticte tephrocotis tephrocotis).** Only one record for Minnesota. One individual of this western species was shot from a flock of Snow Buntings at Minneapolis on Jan. 3, 1889, by Fred Cook. The specimen is now in the Survey collection.

23. **SONG SPARROW (Melospiza melodia melodia).** Lanesboro, Dec. 18, 1888, (Dr. Hvoslef); Cambridge, Isanti county; Lawrence L. Lofstrom reports seeing one bird of this species at various times from Dec. 8 to Jan. 8, 1913-1914, and three during December and January of 1914-1915. They sought the shelter of thick tamarack swamps and seemed thoroughly out of place (The Auk, Vol. XXXII, Oct., 1915, page 503).

24. **CARDINAL (Cardinalis cardinalis cardinalis).** Records of the occurrence of this common cage bird are always open to the suspicion that the individuals seen are escaped captives. But as the Cardinal in common with several other southern species seems to be pushing its range northward, a few really wild birds may have established themselves in Southeastern Minnesota. It is usually resident throughout the year where found. Fillmore county: A beautiful male was seen several times in the vicinity of Lanesboro during the month of January, 1898, by Dr. J. C. Hvoslef. Martin county: In Bird-Lore for March-April, 1914, (Vol XVI, p. 110), is an entertaining account of a male Cardinal being seen at various times during December, January and February, 1913-1914, near Fairmont, by Dr. and Mrs. Hagerty and others. In addition to the

above there are in the Survey Files a number of other more or less well authenticated records distributed throughout almost every month of the year.

25. CEDAR WAXWING: CEDARBIRD: CHERRYBIRD (Bombycilla cedrorum). Sometimes appears in the southern part of the state in considerable flocks during February when the season is mild, and a few stragglers may remain through December. In early spring mixed flocks of this species and its larger northern congener, the Bohemian Waxwing, may sometimes be seen.

Fillmore county: Large flocks of Cedarbirds were seen near Lanesboro, Feb. 20-21, 1889, and Feb. 17, 1897, by Dr. J. C. Hvoslef. A few appeared at the same place Feb. 25, 1890. Chas. Phillips reported seeing six at Red Wing on Christmas, 1906; three at Minneapolis on Christmas, 1912, and two at Minneapolis, on Christmas, 1913. (Bird-Lore, IX, 1907, p. 31; XV, 1913, p. 42; XVI, 1914, p. 47).

26. ROBIN (Planesticus migratorius migratorius). There are now nearly two dozen records in the Survey Files of Robins being seen at various places in Southeastern Minnesota during the winter months. Most of these are of single individuals discovered passing the winter in some sheltered retreat, but in a few instances flocks numbering even as high as fifteen or sixteen birds have been encountered Dr. Hvoslef has reported them eight or nine times during several winters at Lanesboro, Fillmore county. A flock of five was seen by Wm. Kilgore at Prairie Lake, Hennepin county, on Jan. 6, 1905. Dan Schmid reported a flock of fifteen at Lake Minnetonka on Jan. 1, 1913, and stated that two remained in a grove of red cedars at Lake Minnewashta throughout that winter, the weather being intensely cold during late January and February. One remained through the winter of 1903-1904 at Red Wing (Densmore). One at Minneapolis, Jan. 1, 1903, (Dr. Dart). The most northern record is one seen by O. A. Finseth at Oslo, away up in the Red River Valley, at Christmas time, 1912, (Bird-Lore, XV, 1913, p. 42).

27. BLUEBIRD (Sialia sialis sialis). Has been reported only two or three times in Southeastern Minnesota as a straggler during the very mildest winter weather. Minneapolis, seen during the holidays, 1888 (Cantwell, O. & O., XIV, 1889, p. 110). On Jan. 1, 1889, an exceedingly mild day during a phenomenally mild spell of weather, the writer saw a pair of Bluebirds in company with a flock of Evening Grosbeaks in a yard in the city of Minneapolis. At Faribault on Feb. 27, 1913, a Bluebird, probably an exceptionally early arrival, was seen by Miss Georgiana P. Palmer.

SUMMARY

For ready reference and as an index to the preceding lists, the eighty-five species there considered have been arranged below according to the sequence of the Checklist of the American Ornithologists' Union. P. R. means Permanent Resident; W. V., Winter Visitant; H. H., Half Hardy, and Ac., Accidental.

1.	Loon	Ac.
2.	Loon, Red-throated	W. V.
3.	Gull, Herring	P. R.
4.	Merganser, American	P. R.
5.	Merganser, Red-breasted	P. R.
6.	Merganser, Hooded	Ac.
7.	Mallard	Ac.
8.	Shoveler	Ac.
9.	Golden-eye, American	P. R.
10.	Bufflehead	Ac.
11.	Old Squaw	W. V.
12.	Scoter, White-winged	Ac.
13.	Swan, Whistling	Ac.
14.	Gallinule, Florida	Ac.
15.	Snipe, Wilson's	Ac.
16.	Bob-white	P. R.
17.	Partridge, Canada Spruce	P. R.
18.	Grouse, Ruffed	P. R.
19.	Grouse, Pinnated, Prairie Chicken	P. R.
20.	Grouse, Prairie Sharp-tailed	P. R.
21.	Pheasant, English	P. R.
22.	Dove, Mourning	Ac.
23.	Hawk, Sharp-shinned	Ac.
24.	Goshawk	W. V.
25.	Hawk, Red-tailed	H. H.
26.	Hawk, Rough-legged	W. V.
27.	Eagle, Golden	P. R.
28.	Eagle, Bald	Ac.
29.	Gyrfalcon, Gray	W. V.
30.	Falcon, Prairie	Ac.
31.	Owl, Short-eared	P. R.
32.	Owl, Barred	P. R.
33.	Owl, Great Gray	P. R.
34.	Owl, Richardson's	P. R.
35.	Owl, Saw-whet	P. R
36.	Owl, Screech	P. R.
37.	Owl, Great Horned	P. R.
38.	Owl, Snowy	W. V.
39.	Owl, Hawk	W. V.
40.	Kingfisher, Belted	Ac.
41.	Woodpecker, Hairy	P. R.
42.	Woodpecker, Downy	P. R.
43.	Woodpecker, Arctic Three-toed	P. R.
44.	Woodpecker, American Three-toed	P. R.
45.	Woodpecker, Pileated	P. R.
46.	Woodpecker, Red-headed	Ac.
47.	Woodpecker, Red-bellied	P. R.
48.	Flicker, Northern	Ac.
49.	Lark, Prairie Horned	H. H.
50.	Magpie	Ac.
51.	Jay, Blue	P. R.
52.	Jay, Canada	P. R.
53.	Raven, Northern	P. R.
54.	Crow	H. H.
55.	Blackbird, Red-winged	Ac.
56.	Meadow Lark, Western	Ac.
57.	Blackbird, Rusty	Ac.
58.	Grackle, Bronzed	Ac.
59.	Grosbeak, Evening	W. V.
60.	Grosbeak, Pine	W. V.
61.	Finch, Purple	H. H.
62.	Sparrow, English	P. R.
63.	Crossbill, American	P. R.

64.	Crossbill, White-winged	P. R.
65.	Finch, Gray-crowned Rosy	Ac.
66.	Redpoll, Hoary	W. V.
67.	Redpoll	W. V.
68.	Goldfinch	H. H.
69.	Siskin, Pine	H. H.
70.	Bunting, Snow	W. V.
71.	Longspur, Lapland	W. V.
72.	Sparrow, Tree	H. H.
73.	Sparrow, Song	Ac.
74.	Cardinal	Ac.
75.	Waxwing, Bohemian	W. V.
76.	Waxwing, Cedar	Ac.
77.	Shrike, Northern	W. V.
78.	Brown Creeper	H. H.
79.	Nuthatch, White-breasted	P. R.
80.	Nuthatch, Red-breasted	H. H.
81.	Chickadee	P. R.
82.	Chickadee, Hudsonian	P. R.
83.	Kinglet, Golden-crowned	H. H.
84.	Robin	Ac.
85.	Bluebird	Ac.

ADDENDUM.—Through an oversight, the following species, belonging to the Half-hardy group, was omitted from the list, and the discovery not made until it was too late to introduce it in its proper place. This makes the number of birds in that group eleven instead of ten, and the total winter bird list eighty-six instead of eighty-five.

***SLATE-COLORED JUNCO (Junco hyemalis hyemalis.)** This bird was formerly called the "Snowbird." It breeds commonly in northern Minnesota and while the bulk leave the state in winter, a considerable number usually pass the cold season in sheltered places in the more southern counties, even as far north as Hennepin county. During mild winters they are especially numerous, but severe cold sends all but a few of the most courageous further south.

The Junco is six and a quarter inches in length, and may be known by the dark slate-colored upper parts, head and breast, and the clear white under parts sharply contrasted with the slate across the lower breast. The outer tail feathers show much white in flight. The bill is flesh-colored. The female is paler and brownish above. There is usually much reddish brown in the winter plumage of both sexes.

A DREARY WINTER LANDSCAPE, BUT CONTAINS CHEER AND SUSTENANCE FOR THE REDPOLLS, SNOW BUNTINGS, LONGSPURS AND OTHER SEED-EATING VISITORS

Photograph by Jenness Richardson

SMITHSONIAN INSTITUTION LIBRARIES
3 9088 00197292 6
nhbird QL684.M6R6X
The winter bird-life of Minnesota;